

A New Subspecies and further Records of the Genus *Zygaena* Fabricus (Lepidoptera : Zygaenidae) from south-west France and Spain

By W. G. TREMEWAN

Lt.-Col. and Mrs. W. B. L. Manley visited Spain from 9th July-14 August and, although they were too late for many *Zygaena* species, their captures are not without interest and include an undescribed subspecies of *occitanica* de Villers. The description of this new subspecies and records of other species and subspecies are given below.

Z. sarpedon rianoica Tremewan

Z. sarpedon rianoica Tremewan, 1961, *Ent. Rec.*, **73**: 1.

A short series of 5 ♂♂ and 1 ♀ was captured at the type locality, Riano, Leon, 3500 ft., 18-22.vii.1963. The female is aberrant and has spots 2 and 4 confluent with spot 5 while all the spots are somewhat enlarged.

Z. sarpedon ssp.

A male of *sarpedon* Hübner was captured 20.vii.1963 at Villasur, Burgos, 2800 ft., and a female at Oña, Burgos, 2000 ft., 4.viii.1963. These specimens are rather more translucent than specimens of ssp. *rianoica* but, in other respects, are quite similar and are probably referable to this subspecies.

Z. fausta fernan Agenjo

Z. fausta fernan Agenjo, 1948, *Eos, Madr.*, **24**: 394.

This subspecies of *fausta* was described from Mte. Santiuste, Pampliega, Burgos, 894 m. A fresh male captured 5.viii.1963 at Oña, Burgos, 2000 ft., and two worn females taken 27.vii.1963 at Portillo del Fresno, Burgos, 3300 ft., are referable to this subspecies.

Z. fausta margheritae Tremewan

Z. fausta margheritae Tremewan, 1961, *Ent. Rec.*, **73**: 3.

Two very worn females were taken at the type locality, Riano, Leon, 3500 ft., 20.vii.1963.

Z. hilaris leonica Tremewan

Z. hilaris leonica Tremewan, 1961, *Ent. Rec.*, **73**: 3.

Four males and two females were captured at the type locality, Riano, Leon, 3500 ft., 18-22.vii.1963.

Z. occitanica burgosensis ssp. nov.

♂ 25-28 mm. Forewing spots rather small, creamy white rings narrow, spot 6 separate from spot 5. Red coloration a bright scarlet.

♀ 26-31 mm. Forewing spots rather large, creamy white rings rather broad and confluent, spot 6 attached to spot 5 by creamy white scaling along the veins. Red coloration light scarlet.

Holotype ♂, "Oña, Burgos, 2000 ft.: 5.viii.1963 W. & M. Manley"; allotype ♀ with similar data but dated "4.viii.1963".

Paratypes: 18 ♂, 10 ♀, Oña, Burgos, 2000 ft., 4-5.viii.1963, *leg.* W. & M. Manley.

Holotype, allotype and paratypes in W. & M. Manley collection.

From the nominate subspecies from Aveyron, France, ssp. *burgosensis* may be separated by the smaller forewing spots of the males and the rather larger spots of the females. The new subspecies is next to ssp. *disiuncta* Spuler from Vernet-les-Bains, Pyrénées-Orientales but is easily distinguished by the smaller forewing spots of the males. In the females of *burgosensis* the forewing spots are larger and are confluent by the creamy white rings but, in *disiuncta*, the forewing spots of the females are not confluent except 3 and 4. In the females of the latter subspecies, spot 6 is always separate from spot 5 but in the females of *burgosensis* spot 6 is attached to spot 5 by the creamy white scaling along the veins. The red coloration is a pure scarlet compared with scarlet tinged with crimson in *disiuncta*. The sexual difference in ssp. *burgosensis* is striking. An aberrant female has the creamy white rings extended to cover most of the ground colour in the spot area, and is similar to the ab. *albicans* Staudinger which occurs in *occitanica vandalitia* Burgeff from Granada.

Z. occitanica ssp.

Five cocoons of *occitanica* de Villers were collected at Sotopalacios, Burgos, 2800 ft. A male emerged on 6th August, a further male on 9th August and a female on 27th August 1963. These three specimens differ greatly from those from Oña. The rings surrounding spots 1-5 are enlarged in the male and, together with spot 6, are, in both sexes, a distinct cream colour compared with creamy white in the Oña specimens. In both sexes spot 6 is connected to spot 5 by cream scaling along the veins, a character which is present only in the females of *burgosensis*. Sotopalacios is only thirty miles from Oña, however; the localities are on two separate mountain ranges and apparently the populations are geographically isolated. Further material is required to determine whether the Sotopalacios specimens represent a distinct subspecies.

Z. achilleae pardo Agenjo

Z. achilleae pardo Agenjo, 1953, *Graellsia*, 11: 2.

A series of 20 ♂♂ and 6 ♀♀ of *achilleae* Esper was captured 18-22.vii.1963 at Riano, Leon, 3500 ft. 1 ♂ and 1 ♀ were taken 19.vii.1963 at Puerto de Pandatrave, Leon, 4700 ft. and 2♂ and 1♀ were captured 20.vii.1963 at Puerto de San Glorio, Santander, 5000 ft. These specimens are provisionally placed under ssp. *pardo* Agenjo as this subspecies was described from Pesués near Torrelavega, Santander, at the much lower elevation of 14 m.

Z. achilleae ssp.

A rather worn female of *achilleae* Esper was captured 27.vi.1963 at Portillo del Fresno, Burgos, 3300 ft. This specimen may represent an undescribed subspecies.

Z. ephialtes rubens Verity

Z. ephialtes rubens Verity, 1946, *Redia*, 31: 77.

Z. ephialtes parisica Reiss, 1953, *Bull. Soc. ent. Mulhouse*, p. 57.

A male and a female of the peucedanoid form were captured at Vieux Mareuil, Dordogne, France, 350 ft., 10.vii.1963. The male is five-spotted while the female has six spots on the forewings.

Apparently, *Z. ephialtes* is not common in south-west France as very few specimens are known in collections. The British Museum collection contains two five-spotted males and a six-spotted female from Dompierre-

sur-Mer, Charente-Inférieure. It is probable that these populations from south-west France are referable to ssp. *rubens* Verity which was described from Lardy and Issy, Seine-et-Oise.

Z. hippocrepidis rupicola Rocci

Z. hippocrepidis rupicola Rocci 1936, *Boll. Soc. ent. ital.*, **68**: 41.

Z. hippocrepidis asturiensis Reiss, 1936, *Ent. Rdsch.*, **54**: 91, pl. 2, figs.

A fresh female was taken at Riano, Leon, 3500 ft., 23.vii.1963. The subspecies was described from Fuente Dé, Picos de Europa.

Z. hippocrepidis ssp.

2 ♂♂ and 3 ♀♀ of *hippocrepidis* Hübner were captured at Oña, Burgos, 2000 ft., 4-5.viii.1963. The forewing spots are rather small and, in one male and two females, spot 5 is attached to spot 6. The specimens are not unlike those of ssp. *rupicola* Rocci but the forewings are longer and narrower while the spots are smaller. These specimens may represent an undescribed subspecies.

Z. hippocrepidis occidentalis Oberthür

Z. hippocrepidis occidentalis Oberthür, 1907, *Ann. Soc. ent. Fr.*, **76**: 41.

From a cocoon found at Angoulême, Charente, France, 250 ft., an aberrant female emerged on 28th August 1963. The specimen has enlarged, confluent spots while the ground colour in the spot area is finely dusted with vermilion scaling. A typical female emerged 3.ix.1963 from a cocoon collected at Vieux Mareuil, Dordogne, 350 ft.

Z. filipendulae kricheldorffiana Reiss

Z. filipendulae kricheldorffiana Reiss, 1936, *Ent. Rdsch.*, **54**: 75, pl. 2, figs.

Z. filipendulae microseboldi Verity, 1946, *Redia*, **31**: 67 (**syn. nov.**).

A series of 3 ♂♂ and 7 ♀♀ was taken at Riano, Leon, 3500 ft., 18-23.vii.1963. A six-spotted female, ab. *sexmaculata* Tremewan, was captured at Puerto de San Glorio, Santander, 4000 ft., 26.vii.1963. Reiss described the ssp. *kricheldorffiana* from La Liebana, Asturias. It was later described by Verity as ssp. *microseboldi* from specimens taken at Pajares, Asturias, 1300 m. The name *microseboldi* Verity is now placed as a synonym of *kricheldorffiana* Reiss.

Z. filipendulae agutangula Marten f. **sagitta** Marten

Z. filipendulae hybr. *sagitta* Marten, 1956, *Ent. Z.*, **66**: 58.

A series of 5 ♂♂ and 13 ♀♀ of *filipendulae* Linné was taken at Oña, Burgos, 2000 ft., 4-5.viii.1963. A further male and female were captured 3.viii.1963 at Penahorada, Burgos, 2800 ft. The series exhibits considerable variation. Of the twenty specimens taken at random, 3 ♂♂ and 9 ♀♀ are five-spotted. It may be assumed, therefore, that five- and six-spotted forms occur in equal proportions. A six-spotted male has the spots confluent in pairs and a six-spotted female has spots 5 and 6 confluent. In the five-spotted specimens, 2 ♂♂ have spots 3 and 4 confluent.

Marten described the five- and six-spotted population from Penches, Burgos, 700 m. as hybr. *sagitta* Marten. In my opinion it is incorrect to describe specimens of a mixed population as hybrids. The population from Penches is here considered as a local form of ssp. *agutangula* Marten. The specimens from Oña are referable to this form.

Z. filipendulae seeboldi Oberthür

Z. filipendulae seeboldi Oberthür, 1910, *Études de Lépidoptérologie comparée*, 4: 543.

This predominantly five-spotted subspecies was described from the coastal region of Bilbao, northern Spain. A single female, captured 11.vii.1963 at Tolosa, Guipuzcoa, 250 ft., is probably referable to ssp. *seeboldi*. The specimen has a trace of spot 6 which is situated quite close to spot 5.

Z. filipendulae pulcherrima Verity

Z. filipendulae pulcherrima Verity, 1921, *Ent. Rec.*, 33: 90.

A male of *filipendulae* Linné was taken 9.vii.1963 at Blois, Indre-et-Loire, 400 ft. Two females were taken 14.viii.1963 at Loches, Indre-et-Loire, 250 ft. One of the females has a crippled left hindwing, the left forewing being almost devoid of scales. The right wings are normal in shape and the forewing has spot 7 extended along the costa while spots 2-6 are confluent. The specimens are referable to ssp. *pulcherrima* Verity which was described from Dompierre-sur-Mer, Charente-Inférieure, France.

Z. trifolii gadarramica Reiss

Z. trifolii gadarramica Reiss, 1936, *Ent. Rdsch.*, 54: 89, pl. 2, figs.

A male taken 12.vii.1963 at Puerto de Somosierra, Madrid, 4500 ft., is referable to ssp. *gadarramica* Reiss which was described from specimens originating from El Escorial, Madrid.

Z. trifolii laincalvo Agenjo

Z. trifolii laincalvo Agenjo, 1948, *Eos, Madr.*, 24: 397.

This subspecies was described from Estépar, Burgos, 810 m. A single male taken at Penahorada, Burgos, 2800 ft., 29.vii.1963 is referable to ssp. *laincalvo* Agenjo.

Z. trifolii pajini Tremewan

Z. trifolii pajini Tremewan, 1963, *Ent. Rec.*, 75: 8, pl. 1, figs. 18, 19.

14 ♂♂ and 3 ♀♀ were captured at Puerto de Pandatrave, Leon, 4700 ft., 19.vii.1963, 5 ♂♂ at Puerto de San Glorio, Santander, 5000 ft., 20.vii.1963 and 3 ♂♂ at Riano, Leon, 3500 ft., 20-24.vii.1963. A new locality was discovered for the subspecies when 2 ♂♂ were taken on the Sierra de Cabuerniga, Santander, 2000 ft., 7-8.viii.1963. In spite of the differences in elevation the specimens from these various localities are rather constant in character. However, 1 ♂ from Puerto de Pandatrave has spot 4 reduced in size, especially in the left forewing.

Z. trifolii muspratti Tremewan

Z. trifolii muspratti Tremewan, 1961, *Ent. Rec.*, 73: 199.

A female captured at Tolosa, Guipuzcoa, 250 ft., 11.vii.1963, is provisionally placed under ssp. *muspratti* Tremewan which was described from St. Jean-de-Luz, Basses-Pyrénées, France. The specimen has spots 3 and 4 separate, a character which is occasionally found in ssp. *muspratti*.